

**A new rubber.**—HALL and GOODSPEED,<sup>10</sup> in connection with the war demand, have investigated a possible native source of rubber, studying especially *Chrysothamnus*. They found rubber of high grade in *C. nauseosus*, and adopted the name "chrysil" for this particular kind of rubber. This species includes 22 recognized varieties, which have been taxonomically presented by HALL.<sup>11</sup> Of these varieties, 12 were examined and all found to contain rubber. The shrub grows readily from seed and matures in 6–8 years. The largest stands occur in Colorado, Nevada, and Utah; and it is estimated that the total amount of rubber present in wild shrub is over 300,000,000 lbs.

Chrysil is not a latex rubber, but occurs in individual cells. The results of 180-chemical analyses and 80 microscopical examinations are tabulated. The rubber occurs in the plants in greatest abundance about the soil line, being present in the root in only the upper parts, and occurring in small amounts in young twigs and leaves. The best varieties for rubber are those growing in alkaline soils, so that the culture of this rubber-yielding plant could be developed extensively in alkaline regions unsuitable for other crop plants.

The authors<sup>12</sup> also give an account of the occurrence of rubber in other species of *Chrysothamnus* and in *Haplopappus*. They also append a long list of species, chiefly Compositae, in which no rubber was found.—J. M. C.

**Philippine bamboos.**—In a recent bulletin BROWN and FISCHER<sup>13</sup> have presented much interesting data regarding the taxonomy, ecology, and economic value of Philippine bamboos. Nine genera, including 30 species, 17 erect and 13 of climbing habit, are described, and a key for identification is provided. Planting and harvesting methods are discussed, and some data regarding market prices given; but of much more interest to ecologists is a series of accurate growth records extending over a period of 20 weeks. Growth rates of 2 m. per week are not uncommon, and several shoots showed a weekly growth in excess of 3 m.—GEO. D. FULLER.

**Salix.**—SCHNEIDER,<sup>14</sup> in continuation of his studies of American willows, has discussed the section *Adenophyllae*, recognizing 8 species, one of which (from California) is described as new. The discussions and descriptions are very full, and are accompanied by complete citations of collections, so that taxonomists will be at no loss as to the plants referred to.—J. M. C.

<sup>10</sup> HALL, H. M., and GOODSPEED, T. H., Chrysil, a new rubber from *Chrysothamnus nauseosus*. Univ. Calif. Publ. Bot. 7:183–264. pls. 18–20. figs. 6. 1919.

<sup>11</sup> HALL, H. M., *Chrysothamnus nauseosus* and its varieties. *Idem* 7:159–181. 1919.

<sup>12</sup> HALL, H. M., and GOODSPEED, T. H., The occurrence of rubber in certain west American shrubs. *Idem* 7:265–278. figs. 2. 1919.

<sup>13</sup> BROWN, WM. H., and FISCHER, A. F., Philippine bamboos. P.I. Dept. Agric. and Nat. Res., Bur. For. Bull. 15: pp. 32. pls. 33. 1918.

<sup>14</sup> SCHNEIDER, CAMILLO, Notes on American willows. VII. Jour. Arnold Arboretum 1:147–171. 1920.